

VHF-UHF DIGEST

APRIL, 1969

CHICAGO'S-32

COVERAGE AREA



VHF-UHF DIGEST

APRIL, 1969

Vol. 2, Nr. 4

is the official monthly publication of the WORLDWIDE TV-FM DX ASSOCIATION, published at Milwaukee, Wisconsin about the first of each month. Make checks payable to the club at Box 5001, Milwaukee 53204.

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We forgot to explain last month whose tower was on the cover. Its the auxiliary tower of KMTV-3 in Omaha, Nebraska.

I have just received a phone call from Roger Winsor explaining that the abbreviations used this month in his column are officially listed by the National Radio Club, and any DXer who has been around awhile is familiar with this list. I pointed out however that many of our members may be very new in the hobby or very old or as in the case of HQ we have been in TV/FM exclusively for a long time and are not familiar with the abbreviations used by the rest of the hobby. Several months ago I was sent the first draft of the ANARC abbreviation list to add TV nomenclature to it; I was struck by the many terms completely unfamiliar to me which were already on the list. At the time I estimated only about a fourth of the list is applicable to TV. In the days of the AIPA (1954-62), TV DXers were almost completely isolated from other DXers and as such from their abbreviations also. FM DX reports were added only in the last 2-3 years of the AIPA so we were virtually all TV DXers. The new breed of DXer which comprises most of WTFDA's membership is relatively new in the hobby (or at least in our branch of it), and is probably more familiar with nomenclature and techniques of BCB, SW, etc than we old-timers from the AIPA who have most of the editorial positions with this club, (7 out of 11). When this club started we anticipated most of our members would come from the AIPA membership but in fact less than 25% of WTFDAers are former AIPAers. So bear with us OMs if you know the abbreviations. When the abbreviation list is published by ANARC we shall all be in the know, I hope.

Sunspot count took a jump in late February as expected because Europeans were heard in Milw and Chicago the end of the month: Morrie heard BBC the 25th and I heard BBC and ORTF the 28th. Aurora has also begun with Feb. 2 and March 23 being notable dates. SUNSPOTS:

Nov. 68	88.3	131	62
Dec. 68	112.9	154	58
Jan. 69	104.5	154	68
Feb. 69	120.9	213	54
	av.	hi	lo

(The November low is due to the proton event, and the February hi average is due to the high counts at the end of February which should also help the March count/average.)

RENEWALS due this month:

Andre Carbonneau Frank Merrill
Odis Woodward Jr. Bill Miglqy

NEW MEMBERS & renewals received:

Raymond Bell Al Kopec
Mark Lewis W. D. Fait

Another new member I haven't previously announced is Jerry Dee, known to AIPAers as Jerry Easter.

Once again, we wish to remind you that the dues will be raised on 1 June, so if your subscription is up soo (see your mailing label) you may wish to renew before the rates go up.

We have finally accomplished something we've been working on for quite some time: compiling a comprehensive list of TV/FM DXers who may not know of our club yet. The main basis for this list was the 1960 AIPA list with additions from the DX columns of several publications dating back over 10 years in some cases. In excess of 300 names were compiled, form letters were prepared, membership forms, etc. A tremendous job for HQ staff but worth it. fsc

FCC NEWS & DATA

GARY A. OLSON, APT 107
5901 W. BROWN DEER RD.
BROWN DEER, WIS. 53223

STATIONS OPERATING (AS OF MARCH 20, 1969)

UHF ETV	100
UHF Com	174
VHF ETV	76
VHF Com	506

TV

Total Authorized Stations On The Air 856

New Stations Reported On The Air:

*WTIU (TV) ch. 30, Bloomington, Ind., took air March 3rd

New Target Dates Reported:

*WMUL-TV, ch. 33, Huntington, W.Va., July 1969

WSNS (TV), ch. 44, Chicago, Ill., May 1970

FCC COMPLETED ACTION

New Grants:

Hazard, Ky., (Hazard TV Inc.) ch. 57, 15 kw.

Kennewick, Wash., (Applevalley) ch. 42, 126 kw. (satellite of KAPP-TV)

*Demopolis, Ala., (Alabama ETV Commission) ch. 41, 447 kw.

Marion, Ohio, (Marion Television Corp.) ch. 68, 5.33 kw.

Victoria, Tex., (J.J. Tibiletti) ch. 25, 5.38 kw.

Salem, Ore., (Ch. 3 Inc.) ch. 3, 19.1 kw.

Call Letter Changes:

*KWSC-TV, ch. 10, Pullman, Wash., granted KWSU-TV

KVKM-TV, ch. 9, Monahans, Tex., granted KMOM-TV

New Call Letters Issued:

San Jose, Calif., ch. 48, granted KFAS-TV

Honolulu, Haw., ch. 20, granted KUII-TV

Atlanta, Ga., ch. 46, granted WHAE-TV

Flint, Mich., ch. 66, granted WHAX-TV

Worcester, Mass., ch. 27, granted WSMW-TV

Other Changes Allowed:

WSEE-TV, ch. 35, Erie, Pa., ERP to 602 kw.

WRGB-TV, ch. 6, Schenectady, N.Y., granted waiver of station rules to allow station identification as Schenectady, Albany, Troy

KTEN (TV), ch. 10, Ardmore, Okla., denied waiver of station rules to permit station identification as Ada-Ardmore

KEPR-TV, ch. 19, Pasco, Wash., denied waiver of station rules to permit station identification as Kennewick, Richland, Pasco.

WLXT-TV, ch. 60, Aurora, Ill., ERP to 185 kw.

KGSL-TV, ch. 24, St. Louis, Mo., ERP to 530 kw.

WBMO-TV, ch. 36, Atlanta, Ga., ERP to 1347 kw.

Miscellaneous Changes:

FCC has assigned ch. 9 to Glendive, Montana

FCC has refused to reallocate ch. 3 from Salem to Eugene, Oregon.

ACTION APPLIED FOR OR REQUESTED

Applications For New Stations:

Boston, Mass., ch. 7 (Community Broadcasting) 190 kw. -- Channel is currently occupied

*Greenville, N.C., ch. 25, (U. of N. Carolina) 534 kw.

*Wilmington, N.C., ch. 39, (U. of N. Carolina) 450 kw.

Lebanon, Pa., ch. 59 (Hudson Broadcasting) 759 kw.

MIDBITS AND ITEMS OF INTEREST TO TV DXERS

WTVU (TV) New Haven, Conn., has been denied the substitution of ch. 26 for ch. 29 in that City

WQAD-TV, ch. 8, Moline, Ill., has been granted a renewal of license after a long rehearing period

TIDBITS(Cont.)

- # WTAF-TV, ch. 31 in Indiana, is the subject of lots of news as of late. The station's owner recently filed a lawsuit since none of the 3 networks would affiliate with the Marion UHF station. At the same time the station requested permission to switch to channel 17. In the past few weeks the following has happened: (1) NBC has granted the station affiliation, (2) the FCC has denied the station the privilege of switching to ch. 17 but will move ch. 23 from Muncie to Marion and allow WTAF-TV to operate on ch. 23, and (3) the station has surprised everyone by suddenly going off the air without much explanation. It is reported the station will be back on, but nobody seems to be sure when.
- # The FCC intends to add ch. 13 to Mt. Vernon, Illinois. A commercial interest is expected to apply for the channel.
- # Another batch of UHF stations has received an ultimatum to appear before the FCC for oral argument on why they haven't constructed their stations as of yet. KWID-TV, Tulsa; KTOV-TV, Denver; WPNG-TV, Springfield, Ill.; WROA-TV, Gulfport, Miss.; KHER (TV) Longview, Tex.; WTML (TV) Miami, Fla.; WMLK (TV) Janesville, Wis.; WONH (TV) Syracuse, N.Y.; WFNT (TV) Elgin, Ill.; WPCT (TV) Melbourne, Fla.; and WEDT (TV) Florence, S.C., are expected to lose their construction permits unless they come up with some exceptional reasons for not having their stations ready to telecast.
- # A big sale -- the biggest sale ever made for a UHF station was consummated in early March as previously rumored. WFLD-TV, ch. 32, Chicago, was peddled to Metromedia for a price in excess of 10-million dollars. The sale represents the largest amount ever paid for a UHF outlet beating by several million the purchase of Louisville's WLKY (TV) a few years back. Metromedia has not announced any spectacular plans for the outlet. Field Communications' sale of WFLD represents a sad comedown from the fantastic plans established for the station when it first took the air. Originally WFLD was to be the kingpin station of a network of UHF stations owned by Field. WCAN-TV, ch. 24, in Milwaukee was purchased and was expected to be the second entry in the network; WCAN-TV, which was off the air at the time of purchase, never has taken the air -- Field indicates that the permit will either be sold or surrendered. Plans for WFLD were extremely glorious in the beginning. However as time wore on, the station continued to lose money and plans for "something different" in Chicago viewing were gradually abandoned.

FOOTNOTES TO FCC NEWS AND DATA

This month you will notice the addition of Canadian News and Data to your WTFDA bulletin. We are extremely pleased to add this department. This column will handle all Canadian FM and TV station news plus side-lights from the Canadian broadcaster's side of the border.

Your editor for Canadian News and Data is Wayne Plunkett -- no stranger to many members as he piloted the TV-FM DX column for CDXC for many years. Wayne will also be handling FCC News and Data - FM in the future. Although the FM column does not appear this month, it will be appearing each month in the future under Wayne's direction. FM contributors Elving, Fait, and Grade who forwarded material for the FM column to yours truly will note that their items have been sent to Wayne for inclusion in next month's FM column. Please send all items pertaining to the FM FCC News and Data column to Wayne Plunkett in the future; his address, 124 John St., Weston, Ontario, Canada.

CANADIAN NEWS

WAYNE PLUNKETT
124 JOHN STREET
WESTON, ONTARIO, CANADA

It seems a bit strange to be back typing stencils after a lengthy hiatus since the demise of the CDXC. The first thing I want to announce that I have put in a bid on behalf of Toronto to host the 4th annual ANARC Convention and if this comes to fruition, will have many more details in this column in the months ahead. Also, I am searching for a DX travelling companion for a month long jaunt by road all thru northern Alberta & British Columbia, and to the end of the road in various sections of the Yukon and Alaska. The time I have in mind is early June to early July. Anyone at all interested in discussing same, please drop me a line as soon as possible.

The first item of business I want to take care of this month is an up-to-date list of corrections to the FM Stations By Frequency list in the 5th edition of the North American Radio-TV Station Guide by Vane A. Jones as it affects Canadian listings:

- 88.7 - Power for CKWW-FM is 34,000 HP & VP (Horizontal & Vertical Polarization)
- 89.7 - Power for CJUS-FM is 3,800
- 91.1 - Correct power for CJRT-FM to 27,000
- 92.5 - Correct power for CJQR to 41,400
- 93.7 - Correct call for North Bay, Ont. to CKAT-FM and add power 5,860 \$
- 93.9 - Add HP & VP to listing for CKLW-FM
- 94.1 - Change call for Toronto, Ont. to CBL-FM
- 94.9 - Add HP & VP to listing for CKQS-FM
- 95.1 - Correct power for CBF-FM to 24,600
- 95.3 - Correct power for CKDS to 100,000 HP & VP
- 95.9 - Correct power for CJFM to 41,200
- 96.1 - Correct power for CHNS-FM to 19,500
- 96.3 - Correct power for CKWS-FM to 2,700 HP & VP
- 97.7 - Add listing for new station: CBUF-FM - Vancouver, B.C. - 50,000
- 98.1 - Correct power for CHST-FM to 210,000 HP & 100,000 VP
- 98.3 - Correct power for CFFM to 3,900
- 98.3 - Correct power for CBN-FM to 354,000
- 98.3 - Correct power for CKLC-FM to 955 \$ HP & VP
- 98.5 - Correct power for CFMS to 19,000
- 98.9 - Correct power for CKAD-FM to 1,240
- 98.9 - Correct power for CFCG-FM to 5,600
- 99.3 - Correct power for CKLC-FM to 100,000
- 100.7 - Power for CHIN-FM is 50,000 \$
- 100.7 - Correct power for CBM-FM to 24,600
- 100.9 - Correct power for CKCL-FM to 360
- 101.5 - Add listing for new station: CHEX-FM - Peterborough, Ont. - 2,640
- 103.1 - Delete listing for CHUC-FM - this station never existed HP & VP
- 103.5 - Correct power for CHQM-FM to 100,000 HP & VP
- 104.5 - Correct power for CJSS-FM to 850
- 104.5 - Correct power for CRUM-FM to 100,000 HP & VP
- 105.3 - Note that CFCA-FM has been on the air for over 2 years and is 100,000 HP & VP
- 105.7 - Add listing for new station: CFGL-FM - Laval, Que. - 100,000
- 106.7 - Add listing for new station: CJAT-FM - Trail, B.C. - 12,600 \$ HP & VP

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Notes re the Canadian Radio-Television Commission from the November, 1968 Fall Directory issue of THE CANADIAN BROADCASTER :

"Wesley United Church Radio Board in St. John's, Nfld., operating an AM station on a non-profit basis, was turned down on its bid to bring the first FM signal into the province.

The CRTC said it wished to draw attention to its decision of May 28, 1968 concerning the licensing of FM stations. In the opinion of the Commission, the program plans of the applicant were insufficient to warrant granting a license. The Commission also confirmed the long-standing policy of not granting licenses to religious organizations.

Several CBC applications were approved, including a new TV rebroadcasting station at Baie Verte, Nfld., to receive programs off-the-air from CBNAT Grand Falls, for retransmission on Channel 3, ERP 2280 watts video, 460 watts audio, EHAAT 877 feet, directional.

License amendments were granted CBWT-1 Fisher Branch, CBWBT Flin Flon and CBWBT-1 The Pas, Man. to permit provision of live programs from the CBC-TV network service instead of by off-the-air pickup from CBWT Winnipeg."

Want French TV in Saskatchewan

Roger Lalonde of l'Association Culturel Franco-Canadien de Saskatchewan said the most urgent priority for the province is French-language TV service for the 60,000 French-speaking residents, who were rapidly being assimilated by the English culture and were doomed to extinction unless something was done quickly. He said the real answer was for the CBC to set up French-language TV stations to reach them. As an immediate interim step, some of the English-language TV stations should be required to carry some French programs. But the only long-run solution would be getting a full French service into the province.

R. C. Fraser, CBC vice-president, corporate affairs, said the corporation was in final negotiations with CHAB Ltd., operating CHAB-TV Moose Jaw and CHRE-TV Regina, for possible purchase. If successful, this would give the CBC its first owned and operated stations in the province. He said the corporation feels such outlets are necessary if it is to fulfil its obligations to bring a really effective national and provincial service to everyone across the country.

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Quote from the CRTC:

"At present, the only French television service in the Maritimes is provided by CBAFT Moncton, which has rebroadcasters at Cheticamp, N.S. and on les Iles de la Madeleine, but which has no real production facilities of its own. The bulk of its programming is fed to it from the CBC French headquarters in Montreal. News and public affairs shows on CBAFT are thus basically Quebec-oriented. Various groups at the Moncton hearing urged establishment of a service tailored for New Brunswick and the Maritimes generally."

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CFRB is still fighting for Toronto TV license

CFRB Ltd. Toronto will continue its quest to get into television and obtain a license for a third TV station in that city. The CRTC has announced that Channel 6 has been reserved for the London and Kingston/Bellefonte markets. Notwithstanding the assumption that this precludes the Toronto radio station from obtaining Channel 13 for its proposed television operation, CFRB has by no means given up. Don Hartford, CFRB vice-president and general manager told The Canadian Broadcaster that "The CRTC has our application and deposit (dated April 3, 1967) and has not returned them. We are still dedicated to getting into television in Toronto."

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FLASH - On Sat. March 15 at 9 am, after months of trial and tribulation, WNED-TV - Ch. 17 - Buffalo, N.Y. finally made their move to over a million watts - 7 times their previous power. Hooked up to a rusty old 4-bay bow-tie half way up my tower, they throw a good signal into my bedroom using the Blonder-Tongue BTX-11A.

From the November, make that December 1968 "Canadian Broadcaster" :

Will hear first UHF applications at Ottawa hearings Feb. 4

Four groups got in their bids to obtain a license for Toronto's third TV station, on UHF channel 25, by filing applications prior to the November 29 deadline. One of the applicants, Niagara Television Ltd., also sought licenses for two Montreal channels, 17 (French) and 23 (English). Jack Tietolman, president, CKVL AM-FM Verdun (Montreal) and CFUN Vancouver, applied for Channel 29 in Montreal. He also has a previous bid, still standing in his name, for Channel 14 Montreal.

The CRTC will hear the requests at the February 4 public hearing in Ottawa. (ed note - This hearing was subsequently postponed indefinitely for unannounced reasons! However, this information is still valuable for tracing future developments.)

Bidding for the Toronto channel, in addition to NTV, are: CFRB Ltd., part of Standard Broadcasting Corp. Ltd., owning and operating CFRB, CKFM Toronto and CJAD, CJFM Montreal; Toronto Star Ltd., in equal partnership with The Montreal Star Co. Ltd.; and Canadian Film Industries, whose president Leslie Allen also heads up CHIC Brampton, Ont.

The new stations would be the first in Canada to operate on UHF, and although most TV sets now in use cannot receive UHF unless they use an adapter (costing about \$50) or are hooked to a cable system which carries UHF programs, government regulations require that all TV sets sold after June 1, 1969 must be capable of receiving UHF. This would provide a new audience from an estimated 400,000 homes within the Toronto coverage area expected to be equipped to receive UHF telecasts by the end of 1970, said W.C. Thornton Cran, president of Standard Broadcasting Corp. Ltd. Cran said CFRB's bid for a TV station on Channel 25 was made with the intent to operate a "local Toronto station, without network commitments." He noted "programming would be community-oriented and would emphasize news and public affairs." Cran also said CFRB's previous application, to the former CRTC, for a license to operate a VHF station in Toronto, has never been formally dealt with, and had never been withdrawn.

NTV, which is linked with Power Corp. of Canada and Quebec Telemedia Inc. to form NTV Communications Corp. Ltd., appeared before the CRTC last month to make application for a third TV network which it proposed to operate coast to coast in French and English, hooked up with Canada's communications satellite.

The Toronto and Montreal dailies, in their application, propose to incorporate a company to operate their station, having concluded they should "update their hardware" and anticipate tomorrow's problems of delivering conventional newspapers.

Allen said his company, a pioneer film-maker in Canada, had three large sound stages and other facilities needed for TV production located on Lakeshore Blvd. in Toronto's west end. He said the UHF channel could be used for ETV programs in the daytime, and might substitute for a government-operated ETV channel, thus saving taxpayers' money.

Al A. Bruner, president of NTV, also has a long-standing bid before the Commission for Channel 16 Toronto, but it is not yet known whether NTV will let it stand in addition to its bid for Channel 25. (ed note - That's a laugh considering the newly increased power of Buffalo's WNED-TV.)

Ontario Department of Education, seeking Channel 19 in Toronto as the anchor for its proposed ETV network, also made application for a license but it was believed the hearing on this might be delayed pending decisions reached on federal legislation governing ETV in Canada.

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Note in the January, 1969 BROADCASTER re the above:

The brief CRTC announcement last month said only that the UHF applications are being postponed, and another announcement on the matter would be forthcoming.

From the January 1969 "Canadian Broadcaster":

Commission delivers second service verdict for Maritimes television

A Special Policy announcement by the Canadian Radio-Television Commission, setting out a specific formula that would spread second English-language TV service through the Maritimes, was issued before 1968 ended, as promised by the Commission. The step-by-step program, as outlined, was designed to end a tangled situation that has limited thousands of Maritime viewers to reception of a single Canadian TV channel. The policy includes nine steps to be taken as quickly as possible:

1. CKCW-TV Moncton, N.B., English-language outlet, changes from an affiliate of the publicly-owned CBC network to an affiliate of the privately-owned CTV network, and sets up a rebroadcasting station in the Fredericton-Saint John area.

2. Rebroadcasting stations operated by CKCW-TV at Campbellton, Upsalquitch and Newcastle, all in New Brunswick, remain affiliates of the CBC network, carrying CBC national and regional programming plus some local programs originated by CKCW-TV, even though it has become part of the CTV network.

3. The CBC establishes production facilities in Fredericton for origination of programs in both English and French.

4. CHSJ-TV Saint John, N.B. remains as an affiliate of the CBC English-language network, and sets up a rebroadcasting station in Moncton.

5. The license for CHSJ-TV would require that the station carry a stipulated quantity of CBC programs of national and regional interest.

6. CJCH-TV Halifax, a CTV network affiliate, extends service via rebroadcasters to southern Nova Scotia, "namely the counties of Lunenburg, Queens, Shelburne, Yarmouth and Digby."

7. CJCB-TV Sydney, N.S., CBC English affiliate, joins the CTV network as a full affiliate and extends service to Prince Edward Island through a rebroadcasting station.

8. The CBC sets up rebroadcasting stations to cover the area now reached by CJCB-TV, which has rebroadcasters at Antigonish and Inverness in Nova Scotia.

9. CBC French service is extended to Yarmouth, Cape Breton and Halifax areas of Nova Scotia, and to the Fredericton-Saint John area of New Brunswick via rebroadcasters.

The CRTC will also seek solutions to the four other major problems. One is to determine the means to rebroadcast programs of Moncton's French-language CBC station to reach northern New Brunswick. Another will be to find a way to reach English-language residents of northern Cape Breton who are presently without TV service. Improvement of coverage in the Antigonish area of Nova Scotia, and extension of alternate TV service in the northern part of New Brunswick's Saint John River valley will also come under study.

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CRTC rushes decisions from November hearings

The Commission said it was delaying decisions on three applications by the CBC for power and/or frequency changes for CBM-FM, CBF-FM Montreal, and CBC-FM Toronto "because of current studies on FM broadcasting" being carried on. Decisions on the proposed license amendments for the three stations will be made after discussions with the CBC and a review of the studies.

Share transfers approved included those of Ralph Snelgrove Television Ltd. licensee of CKVR-TV Barrie, CKVR-TV-1 Parry Sound, CKVR-TV-2 Huntsville and CKVR-TV-3 Haliburton, all in Ontario, to transfer 3,785 common shares from Geoffrey W. Stirling to CHUM Ltd.

(Ed note - This means CHUM Ltd. now is in effective control of CKVR-TV by virtue of 2/3 share ownership, and what future moves it may make to invade the Toronto market by the back door will have to be seen.)

WESTERN TV DX

APRIL 1969

Dennis Park Smith
Music Department
University of California
Santa Barbara, California 93106
Deadlines: 12th of each month

This is the low point of the year for VHF-UHF DX, as our forms of propagation such as tropospheric bending and sporadic-E skip are normally least likely to occur, during late February and March. Sometime in April, though, as the weather warms, tropo begins to pick up in areas of North America east of the Rockies, and, to a degree, along the immediate coastline here in the West. Also in late April or May, the summer Es season commences.

Our column this month reflects the low ebb of DX, as no actual DX reports were received. We do have a few items of past loggings to go over and clarify, however.

Stan Wigh of Kingsburg, California had some items which we didn't include last month. He said that his local KICU 43 Visalia apparently went off last summer 1968. Your editor left Wasco for the summer in mid-September and vaguely remember KICU as still on, so it may have left the air shortly after that if it was still on.

Stan had also said that one of the three KQED-9 UHF translator loggings was a Ch. 76 transmitter in nearby Hanford, about 15 miles away, which comes in without much snow when tropo picks up. Further information comes from Glenn Hauser who had checked with translator lists in a 1968 Television Factbook. (If I had regularly checked Broadcasting magazine, I might have had an idea.) From these lists, both Stan's and my reception appears to have been from Ch. 73 Exeter, Ch. 76 Hanford, and Ch. 79 Porterville. Distances are up to about 65 miles at the most for these translators from Kingsburg and Wasco, but will save final figuring for next time, when we expect to know the transmitter locations, though it seems that 73 and 79 are on hilltops as Stan gets 73 quite well, too. KQED has been written and we expect to hear from them any time. Transmitter powers are all 100 watts, which means ERP is probably around a kilowatt.

Here along the southern California coast, February and March has seen no inversion and tropo between here and points southeast as far as San Diego. The extreme violent, rainy weather has kept such conditions from gaining stability. At deadline, in mid-March, spring appears to be on the way, so quiet conditions, warm weather, and air layers should start to develop once again.

We'll have more items to pass along next time, and perhaps a little DX as well.

Best of DX to all Dennis

Photos at right are sent by Bill Heusmann of Steger, Ill.

WISC-3, Madison, Wisconsin.

WTHI-10, Terre Haute, Indiana.

tx, William.



Bill Heusmann
3116 Sangamon St.
Steger, IL 60475

The current lack of DX is certainly making itself felt in the number of CCI reports received....none. Or do I have bad breath? What I do have is enough odds and ends to, hopefully, fill this page.

A month or two ago I wrote to RCA and inquired about the station they were supposed to have for the express purpose of receiving BBC-TV. The answer, from Mr. J. M. Etter, Engineer-in-Chief of RCA Communications, Inc. at Riverhead, N.Y. may be of interest. To quote Mr. Etter, 'we here in RCA Communications were not directly involved in propagation research work of the type in which you are interested. This work was carried on by a local RCA Laboratories group which closed down about 1958. They never did have a station set up for the specific purpose of receiving BBC-TV broadcasts. This activity was rather limited to relatively small equipment installations in one or another of our operating or research buildings.'

Our earliest activity was in 1937 (regular BBC-TV broadcasts began in 11/36. bh) and continued for several years. This was reported in the Proceedings of the Institute of Radio Engineers for November, 1939. I can recall seeing fleeting glimpses of TV pictures from Alexandra Palace in those early days. There was no entertainment value to the pictures, of course, but it was quite a thrill to see a recognizable face or object from such a distance.'

'There was, to my knowledge, no such extensive activity in subsequent sunspot highs. I recall nothing at all in the '46-'47 years. In 1956 there was a brief flurry of activity which involved an attempt to tie BBC TV reception into a live U.S. TV program. (Or was it '53, for the Coronation? bh) I believe that some signals of interest were received a day or two before the scheduled program, but that conditions stepped in (as usual) and nothing at all was received on the scheduled day. By 1957/58 this research group was being phased out here at Riverhead and the entire activity closed down shortly thereafter.'

It's a shame that the activity wasn't as great as we might have hoped, but the information is interesting just the same. Thanks, again, Mr. Etter. Does anyone know where we might find a copy of that article mentioned in the letter? That, too, may be of interest.

Your editor noted an interesting mix-up this afternoon (3/24) at 13:00. At that time, local WBBM-2, CBS, suddenly started carrying the video from ABC for two or three minutes. At the same time, the normal CBS audio was being heard. Chances are, no DXer was seeing WBBM at that time, but if they had, it certainly might have led to one confused DXer.

Plans are slowly being laid for the WTFDA convention. It is still planned for the Memorial Day weekend, the 30th, 31st and 1st and will be held in Matteson, Illinois, only a few short miles from exciting Steger. The Covert Motel there has a nice sized, reasonably priced meeting room and should provide accommodations for all. Rates for a twin room will run from about \$11.00 to \$15.00, depending on its location. Full details on rates, routes, events, registration fee (hopefully \$7.00 or \$8.00, but don't count on it) and so on will appear next month. We would still like to hear from anyone who can make it. Please take a moment and let us know. Write to John Hansen, 3001 Sangamon St., Steger, IL, 60475. Remember, a convention is only as good as the people who attend it. We need each and everyone of you to make this thing a success!

Finally, on the international scene, it has been reported that a new Israeli crime group, the Kosher Nostra, recently held up a Tel Aviv bank and got away with \$100,000 in pledges! Did you know that if you mix lox and LSD you get a trip to Israel? O.K., how do you say 'victory' in Arabic?.....You don't! Until next month, 73, Bill

STATISTICS

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Volume 2
Number 4
APRIL 1969

New reporters. Fred Nordquist and Larry Vogt. For anyone who finds it inconvenient to submit a list in our arrangement, a photocopy of your loggings list will do instead.

Comments on Standards. Morrie Goldman points out that we completely overlooked amateur television. My first reaction is that amateur TV stations received should be kept in a separate category from broadcast stations--as should fixed TV (2500 MHz band). Comments? Morrie also expresses concern over the lack, so far, of any records involving non-American standards of transmission. Patience! This too shall come.

CHANNEL 8 SKIP TVDX RECORD

Call	Location	Miles	DXer, Location	Comments
KZTV	Reno NV	1490	Jerry Don Burch, Hot Springs AR	now KOLO

CHANNEL 8 TVDX RECORDS (Trops, groundwave, unknown)

KAIT	Jonesboro AR	395	Glenn Hauser, Enid OK	
KSBW	Salinas CA	145	Dennis Smith, Wasco CA	
KFMB	San Diego CA	885	Albert Brant, Salem OR	
K08FL	Santa Barbara CA	0	Dennis Smith, Santa Barbara CA	of KEYT-3
WNHC	New Haven CT	450	Carlton Howington, Uniontown OH	was ch 6
WFIA	Tampa FL	665	Ray Foster, Monroe LA	
WGTV	Athens GA	255	David Cox, Carrollton AL	
WYGA	Waycross GA	25	Jeff Kadet, Nahanta GA	
KIFI	Idaho Falls ID	165	Elwood Walter, Roy UT	
WSIU	Carbondale IL	450	Bill Draeb, Kewaunee WI	
WQAD	Moline IL	550	Mike Tilbrook, Pittsburgh PA	
WISH	Indianapolis IN	775	Don Ruland, Holly Hill FL	
KRNT	Des Moines IA	725	Robert Seybold, Fredonia NY	
KOMC	Oberlin KS	665	Dave Janowiak, Joliet IL	
KNOE	Monroe LA	870	Steve Weinstein, Pittsburgh PA	
LYES	New Orleans LA	845	Carl Dabelstein, Omaha NB	
WAGM	Presque Isle ME	590	Richard Nieman, Buffalo NY	
WOOD	Grand Rapids MI	655	Ed Rugel, Independence KS	was ch 7, WLAV
KOHU	Columbia MO	485	Roger Brown, East Lansing MI	
KCHT	Billings MT	690	Carl Dabelstein, Omaha NB	
WDDQ	Shelby MT	0	Dennis Smith, mobile	now KULR
KOLO	Reno NV	160	Dennis Smith, Walnut Creek CA	of KRTV-3
WABW	Mount Washington NH	1325	Bedford Brown, Hot Springs AR	was KZTV
KSNS	Roswell NM	390	Glenn Hauser, Enid OK	
K08BC	Springer NM	0	Glenn Hauser, Springer NM	of KOB-4
WROC	Rochester NY	505	Bill Draeb, Kewaunee WI	was ch 5
WEN	Syracuse NY	575	Bill Draeb, Kewaunee WI	now ch 5
WCHP	High Point NC	385	Ed Kowalski, Philadelphia PA	
WDZ	Devils Lake ND	165	Fred McCormack, Des Lacs ND	
KURV	Williston ND	160	Bernard Koenig, Regina Sask	
WTV	Cleveland OH	775	Bedford Brown, Hot Springs AR	was ch 9, WXEL
KPFO	Sayre OK	125	Glenn Hauser, Enid OK	was KSWB, Elk City
KTVK	Muskogee OK	970	Robert Seybold, Dunkirk NY	now off air
KTUL	Tulsa OK	720	Bill Draeb, Kewaunee WI	
KGW	Portland OR	240	Eddie Albright & Charles Wood, Mt Ashland OR	
W08AG	Lancaster PA	605	Dave Janowiak, Joliet IL	was ch 4
WEN	Uniontown PA	115	Carlton Howington, Uniontown OH	of WIIC-11
WED	Florence SC	635	John Cody, Middletown CT	now ch 13
WSD	Brookings SD	135	Stu Grade, Sioux City IA	
WSIX	Nashville TN	1215	Enrique Veazey Fernandez, Ci. del Carmen, Mexico	
WFAA	Dallas TX	1165	Robert Seybold, Dunkirk NY	

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KUHT	Houston TX	775	Enrique Veazey Fernández, Ci del Carmen, Mexico
KCTV	San Angelo TX	370	Glenn Hauser, Enid OK
WXEX	Petersburg VA	600	Don Ruland, Holly Hill FL
WCHS	Charleston WV	670	Bedford Brown, Hot Springs AR
WKBT	La Crosse WI	670	Robert Cooper, Oklahoma City OK
WDSE	Superior WI	125	Larry Addison, Fridley MN
CFCN2	Banff Alta	0	Bill Heusmann, Banff Alta properly CFCN-TV-2
CHAN	Burnaby BC	120	Elwood Walter, Seattle WA
CKSS	Baldy Mountain Man	220	Fred McCormack, Des Lacs ND
CJSS	Cornwall Ont	205	James Pizzi, Rochester NY
CKVR2	Huntsville Ont	15	Morris Sorensen, Emsdale Ont properly CKVR-TV-2
CKNX	Wingham Ont	340	Dave Janowiak, Milwaukee WI
XHAH	Las Lajas Ver	680	Jack Keene, Houston TX
WSVI	Christiansted VI	5	Robert Cooper, Frederiksted VI
TOTAL for 55 stations		25445	+ 1490 (skip) = 26935

Analysis. By distance, the top four are Seybold, 2860 miles; Brown, 2770; Draeb, 2250; and Veazey, 1990. By number of records held, Hauser has 5; Smith and Draeb, 4 (but Draeb's are all "DX"---no locals); Seybold, Janowiak and Brown, 3 each. This time the unDXed stations include: WSLA Selma AL, KINY Juneau AK, KAET Phoenix AZ, KHQL Albion NB, KLAS Las Vegas NV, KGNS Laredo TX, "CBWAT" Kenora Ont, and CFQC Saskatoon Sask. All too many, actually. Not to mention AFRTS stations all over the world....

CHANNEL 18 TVDX RECORDS

KCHU	San Bernardino CA	25	Eric Norberg, Claremont CA	now off air
WHCT	Hartford CT	380	Dennis Smith, Little Creek VA	was WGTH
WFAM	Lafayette IN	440	Mark Lewis, Downsview Ont	now WLFI
		tie	David Kanaar, Buffalo NY	
WLEX	Lexington KY	470	Bill Draeb, Kewaunee WI	
WSYE	Elmira NY	555	Bill Draeb, Kewaunee WI	
WCCB	Charlotte NC	310	Larry Vogt, Springfield VA	
WHIZ	Zanesville OH	420	Bill Draeb, Kewaunee WI	
WXIX	Milwaukee WI	430	Robert Seybold, Dunkirk NY was ch 19, now WPTV	
TOTAL for 8 stations		3030		

CHANNEL 19 TVDX RECORDS

WHNT	Huntsville AL	560	Rod Muoma, Detroit MI	
KLOC	Modesto CA	170	Dennis Smith, Wasco CA	
WTVH	Peoria IL	565	Richard Nieman, Buffalo NY	now WIRL
WCDC	Adams MA	435	Carlton Howington, Uniontown OH	
WUCM	Bay City MI	240	Bill Heusmann, Steger IL	
KCSD	Kansas City MO	515	Bill Draeb, Kewaunee WI	
KXNE	Norfolk NB	410	Glenn Hauser, Enid OK	
WXIX	Cincinnati OH	400	Bill Draeb, Kewaunee WI	
KMPT	Oklahoma City OK	5	Glenn Hauser, Oklahoma City OK	now off air
WXIX	Milwaukee WI	410	John T. Sowders, Jr, Richmond KY	
TOTAL for 10 stations		3710		now ch 18, WPTV

CHANNEL 20 SKIP TVDX RECORD

WICS	Springfield IL	MS	555	Robert Seybold, Fredonia NY
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CHANNEL 20 TVDX RECORDS

WCOV	Montgomery AL	680	Ken Stryker, Northbrook IL
WATR	Waterbury CT	365	Dennis Smith, Little Creek VA
WCES	Wrens GA	330	David Cox, Carrollton AL
WXXW	Chicago IL	430	Mark Lewis, Downsview Ont
WICS	Springfield IL	585	Art Collins, Buffalo NY

more

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WJMR	New Orleans LA	435	Rich Lowry, Temple TX	
WDCA	Washington DC (MD)	150	Dennis Smith, Little Creek VA	was ch 61, also ch 12; now off air
WJMY	Allen Park MI	265	Bill Draeb, Kewaunee WI	now off air
WPAG	Ann Arbor MI	250	Art Collins, Buffalo NY	now off air
WOUB	Athens OH	320	Morrie Goldman, Chicago IL	
TOTAL for 10 stations		3810		

CHANNEL 21 TVDX RECORDS

KDAS	Hanford CA	60	Dennis Smith, Wasco CA	now off air
WPTA	Fort Wayne IN	340	Richard Nieman, Buffalo NY	
KQTV	Fort Dodge IA	tie	Mark Lewis, Downsview Ont	
WKMU	Murray KY	435	James Gould, Kokomo IN	now KVFD
WXXI	Rochester NY	365	Dave Pomeroy, Kansas City KS	
WFMJ	Youngstown OH	105	Wayne Plunkett, Weston Ont	
WHP	Harrisburg PA	440	Carl Lupton, Shelbyville IL	
KFWT	Fort Worth TX	265	Mark Lewis, Downsview Ont	
WHA	Madison WI	255	Glenn Hauser, Enid OK	
TOTAL for 9 stations		385	Dave Pomeroy, Kansas City KS	
		2650		

Analyses. 18: Bill Draeb leads with 3 records at 1445 miles. 19: Draeb again, 2 records at 915 miles. 20: Art Collins, 2 records, 835 miles and Dennis Smith, 2, 515. 21: Dave Pomeroy, 2 records, 750 miles, and Mark Lewis, 2 records, 605 miles.

ADDITIONS AND REVISIONS TO CHANNEL 2 TVDX RECORDS

AS2XBS	Chicago IL	110	Ferdinand Dombrowski, Lebanon WI	now off air
KOOK	Billings MT	1450	Robert Seybold, Dunkirk NY	
KORK	Las Vegas NV	1460	Gary Olson, Champaign-Urbana IL	now ch 3
"3BXAT2"	High Prairie Alta	800	Fred McCormack, Des Laes ND	
CMKU	Santiago de Cuba	2865	Robert Cooper, Fresno CA	
	Panamá Panama	1150	Robert Cooper, Frederiksted VI	Tevedós

ADDITIONS AND REVISIONS TO CHANNEL 3 TVDX RECORDS

WEDU	Tampa FL	1425	Fred Nordquist, White Sands Missile Range NM	
KRTV	Great Falls MT	1225	B. J. Bingham, Festus MO	
KINE	Lexington NB	1215	Stephen Dionne, Binghamton NY (tie)	
K03BP	Springer NM	0	Glenn Hauser, Springer NM	of KGGM-13

REVISION TO CHANNEL 4 TVDX RECORDS

WSM	Nashville TN	1835	Dennis Smith, Santa Barbara CA	
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ADDITIONS AND REVISIONS TO CHANNEL 5 TVDX RECORDS

WHDH	Boston MA	1100	David Cox, Carrollton AL	
WPTZ	Plattsburg NY	1375	Glenn Hauser, Enid OK	
KTYR	Bismarck ND	1260	William Hider, Binghamton NY	
XHFI	Chihuahua Chih	1100	David Cox, Carrollton AL	

ADDITIONS AND REVISIONS TO CHANNEL 6 TVDX RECORDS

K06AV	Wolfpoint MT	0	Dennis Smith, Wolfpoint MT	of KUMV-8
CMQ	La Habana Cuba	2430	Robert Cooper, Fresno CA	

ADDITIONS AND REVISIONS TO CHANNEL 7 TVDX RECORDS

WBKB	Chicago IL	685	Robert Cooper, Oklahoma City OK	now WLS
WSAU	Wausau WI	765	Robert Cooper, Oklahoma City OK	
WRIK	Ponce PR	115	Robert Cooper, Frederiksted VI	

Planned for an upcoming issue: A comprehensive statistical breakdown of lowband records, as revised. Until the next, 73 de Glenn

FM DX . . .

A very slow month here with only one report from steady contributor Bill Bens. 3/19 saw a fairly decent trop opening to the north, all stns. hrd. unn though. The only noteworthy hrd were WNTH 88.1 and WMTH 88.5, both Chicago area ed. stns. Logged and reported both from 1:00-2:00, $\frac{1}{2}$ hour on each. WFIM 100.7 Elkhart, Indiana now using new calls, ex WTRC-FM. As a suggestion from my point of view on music for anybody within the range of Chicago FM, try WEXI 92.7 for an excellent mixture of rock and good MoR tunes. They're in stereo 24 hours a day.

Bill Bens 5575 Spruce Wood Drive Cincinnati, Ohio 45239

Hi gang. Things have really been going slow ever since that fantastic 1/20 opening. The only worthwhile trop opening since then occurred on 2/2: (all times EST, all DX on tape). At 10:15 while local WEBN was off, I finally completed Terre Haute, Ind. with WPPR-102.7 (new 9,500w) on what sounded like a s/on. Then @10:27 a nice surprise as KQV 102.5 Pa. overrode WHIZ until WEBN s/on @11:00. KQV-FM sounded like simulcast of AM w/rock programming. Finally @13:00, WUSO 89.1 Ohio (10w @65 mi.), for my second 10 watter. Total now stands at 307. My hopes were high on 2/2 becuz the opening was following the same pattern as the biggie on 1/20 until 15:00 when the rains came and killed things. 73. (Bill, tnx for your suggestions on format. I didn't receive any other suggestions. Just remember, please double space your reports and try to type them if possible.

I have rec'd. a long report from Hank Holbrook in which he lists all his verifications in 1968. Hank, I am taking the liberty to omit the closer ones and listing the others, so that a starting FM DXer can realize that good FM DX is possible. Here they are by state, freq, type of verie and other notes:

WWOM	98.5	New Orleans, La.	985	L	
KUHF	91.3	Houston, Texas	1250	L	9.8kw
KEEZ	97.3	San Antonio, Texas	1400	L	
KCLE	94.9	Cleburne, Texas	1260	VR	
KMFA	89.5	Austin, Texas	1335	L	50kw
KANS	96.7	Larned, Kansas	1225	Ppo	VS plz Hank!!
90.3	WPLN	Nashville, Tennessee	600	L	
KUMD	89.1	Duluth, Minnesota	190 watts	965	L Most distant rpt
KZAK	93.1	Tyler, Texas	1150	L	110 mi prior to mine. Best DX
KBUY	93.9	Ft. Worth, Texas	1240	PC	SS 100kw
CME-2490.5		Habana, Cuba	1130	QSL R.	Progresso pgm cy. #5
WOCN	94.9	Miami, Florida	925	PC	81kw
WEJL	107.1	Scranton, Pennsylvania	180	L	Most distant & 1st reception report. 125 watts
WPKN	89.5	Bridgeport, Connecticut	700 watts	250	L Most distant rpt.
WRTC	89.3	Hartford, Connecticut	290	L	Most distant rpt.

A few holdouts. Most wanted is KBER San Antonio, Texas on 100.3mc. Total verifications stand at 513 from 31 states, 3 Provinces plus Bermuda, Cuba and PR.

AN URGENT NOTE from HQ:

Some of us poor devils are not familiar with all the abbreviations used by some members, so would you please share your secrets with us so we can marvel at your great DX also? Thank you very much.

BOB'S TECH NOTES

SOME QUESTIONS AND ANSWERS ABOUT COAXIAL CABLE

As a result of the four part 'Ultimate DXing Installation' series recently run in VUD, I've had some correspondence from members on the matter of using coaxial cable for TV DXing installations:

Question: 'I understand that when dry, tubular twin lead (including the foam filled stuff), shielded 300 ohm twin lead and open wire line are all superior (have less loss) than RG-59/U coaxial cable. And that when dry, even old fashioned flat line (300 ohm) has less loss than coax. In light of this, how can you recommend RG-59/U coax cable?'

Answer: Here are comparable wet and dry loss figures at channels 2,6,7 and 13 for each type of lead in (or T) line:

<u>Type Line</u>	<u>Loss per 100' - Dry</u>	<u>Wet</u>
Flat (7 x 25 awg)	1.1 db ch. 2	7.0 db -2
	1.4 db ch. 6	7.5 db -6
	1.8 db ch. 7	8.5 db -7
	1.95 db ch. 13	9.0 db -13
Tubular	0.7 db ch. 2	2.1 db -2
	1.0 db ch. 6	2.5 db -6
	1.3 db ch. 7	3.7 db -7
	1.5 db ch. 13	3.9 db -13
Open Line (300 ohm)	0.3 db ch. 2	1.1 db -2
	0.4 db ch. 6	1.2 db -6
	0.7 db ch. 7	2.0 db -7
	0.8 db ch. 13	2.1 db -13
RG-59/U (foam)	3.5 db ch. 2	same
	4.0 db ch. 6	as
	5.6 db ch. 7	dry
	5.8 db ch. 13	losses
RG-11/U (foam)	1.9 db ch. 2	same
	2.1 db ch. 6	as
	3.1 db ch. 7	dry
	3.3 db ch. 13	losses

The worst possible transmission line is wet flat line (up to 9 db per 100 feet at channel 13.) The best possible transmission line is dry open wire line.

However, any non-shielded line will pick up noise from nearby noise sources, such as: neon signs, auto and other internal combustion engines, power lines, home appliances. There is always noise of one or more forms in a built up, residential area. If you elevate your DXing antenna so that it is above the noise sources (ie. above power lines, etc.) you will reduce noise pick up by the antenna proper. However non-shielded transmission lines will act as noise-pick-up antenna(s) on the way to the receiver, and the noise they pick up will be added to the signal voltages present at the receiver antenna terminals, often burying the weak signal(s) in man-made noise.

With weak signal reception you are fighting twills; trying to get

enough signal with the antenna, and, trying to keep the weak signal from being covered up by local noise.

A low loss transmission line, that brings more signal to the receiver (such as open wire line) is important. But so is keeping noise pick up from local sources at a minimum!

By using coaxial cable (such as RG-11/U foam if you want the lowest loss economically available) and an antenna mounted pre-amplifier, of good construction, you get the best of both worlds. The coaxial cable eliminates 99 % of all transmission line noise pick up, and the antenna mounted pre-amplifier boosts the signal(s) alone before they are mixed with any possible transmission line noise pick up. The antenna pre-amp with 12 db or more gain MORE than compensates for any extra loss that the coaxial cable might have, over another form of transmission line.

Coaxial cable is the ONLY transmission line not affected by wet weather, and it will outlast by 2 to 1 any other type of line.

Question: 'With a 300 ohm antenna, or 300 ohm receiver, or both, I will need a balun to match the 300 ohm item to the 72 ohm coaxial cable. Don't baluns lose signal too?'

Answer: No. This is a fallacy. A balun is simply a transformer; an impedance changing device. If you had two identical baluns, and connected them back to back (300 ohm side to 300 ohm side with no 300 ohm line between them except for the pig tails on each balun), and fed 100 microvolts of channel 13 signal (at 72 ohms) into one of the baluns, you could connect a CATV field strength meter to the 72 ohm side of the second balun, and measure 100 microvolts. The popular belief that baluns lose signal is due to the fact that when you transform a 300 ohm 100 microvolt signal to a 72 ohm signal, in a balun, you must allow for the voltage transformation as well as the impedance transformation. But when you go from 300 ohms to 72 ohms; and then from 72 ohms back to 300 ohms, you end up with just what you started with - less the loss of the transmission line in between - only.

Question: 'Can I tape coaxial cable to the antenna mast, the antenna boom, and down a drain pipe?'

Answer: Absolutely. Shielded line, such as coax, is NOT affected by nearby metal objects, while all non-shielded lines are. When taping it from the feedpoint (or antenna balun or antenna pre-amp output) back along the antenna boom to the antenna mast, follow the underside (opposite side from side elements are mounted on) of the antenna boom.

Question: '...and at UHF...?'

Answer: Use coaxial cable (RG-11/U) only when you have a quality antenna mounted pre-amp such as described in the series. Noise pick up from man made noise is very low at UHF, so foam filled (or air) tubular line or even open wire is best for UHF work, when no pre-amp is used.

Bob Cooper, Jr.

SEE MORE SKIP WITH
A "REPOLARIZED" ANTENNA

This is a construction project in the "loosest" sense only. Actually, it is more theory, personal test results, a little "rambling", and a basic idea. The development of the idea into a workable system is really up to the individual.

STRONG LOCALS AND IONOSPHERIC RECEPTION

Strong locals are, undoubtedly, a pet peeve for most TV/FM DXers. If located within 10 miles of a low band TV or FM local, a DXer's chance for E'skip is poor indeed on that channel. And this strong local often ruins the adjacent channels. Also, since the productive E'skip season of May, June, and July usually coincides with improved tropo reception, those 50 to 200 mile semilocals often are received with local quality, making it difficult to log weak skip on those channels. Often, weak offset bars or strong offsets with only occasional "settling" are the only reward for hours of TV dial twisting.

Here in Greenfield, Wisc., Milwaukee locals WTMJ and WITI (eight miles away) prevent skip reception on ch. 4 and 6. But Chicago and Green Bay low banders 100 miles away on ch. 2 and 5 and Madison and Kalamazoo on ch. 3 (80 and 130 miles) hurt even the "open" channels when tropo is strong. (Stop from ch. 4 and 6 doesn't help.) Since I'm a 1800-2400 skip DXer on weekdays when "homeowner's chores" are completed, I not only miss out on the ideal daytime skip but must be satisfied with evening skip challenged by the usually rapidly improving, early evening, Great Lakes tropo. Near perfect fringe reception is fine to view or show off to the neighbors, but it's a pain when weak skip is trying to visit.

This article describes a technique that should improve the chances of receiving E'skip (and, most likely, meteor skip and aurora) over semilocal TV stations as close as 20 miles away, but -- most likely -- in the 50 mile and up range. (This will vary, of course, due to location, station strength, receiver, and antenna.) Reduction of adjacent channel interference is another benefit. Improvement of skip chances should be noted on most FM channels also.

COMMON SOLUTIONS TO THE STRONG LOCAL PROBLEM

Several techniques -- some common, others not -- have been used to improve skip reception on channels occupied by locals or semilocals. Since each technique is a slightly different approach, a brief review is helpful.

Single Channel Yagi-

The excellent directivity of multielement or correctly stacked single channel yagis is an excellent weapon to combat a strong semilocal. The narrowing of the front lobe to as small an angle as possible (10 to 15° typically for two 10-element stacked yagis) will work in all cases unless the skipper and local are exactly aligned. But this advantage is great compared to the poor directivity of the all-channel yagi, with its many side lobes; or the all-channel "pure" log periodic, with its very wide low band front lobe; or the loaded director/log periodic combo (big Jerrold and JFD LPs, for example), with a directivity pattern a mixture of the first two. Of course, stacked single channel yagis plus rotor and mast for several channels are expensive, and a roof (even mine) can hold only so many antennas.

Screened Reflector-

A screen can be added in place of the reflector on yagis to improve front/back ratio and directivity. This technique -- really the same as for the single channel yagi -- has been described often.

Since the screen is almost a full wave length long, however, it is just too big for use with rotatable antennas at low frequencies.

Dipole Method-

Since the local is so much more powerful than the weak skipper, an ideal approach is to either (1) increase the weaker signal, (2) reduce the local strength, or (3) lower the local signal more than the weak station, so the ratio of local to weak signal is reduced. DXing pioneers in metropolitan areas often disconnected the roof-mounted array and connected a simple cut-to-channel dipole. Often, the local strength was reduced more than the distant station, and an ID was made. King Schafer -- AIPAer and TV DX'pert in Kenmore, N.Y., a Buffalo near-suburb -- logged double-hop channel 2 E'skip several years ago with a dipole only in the basement!

Sometimes a spot outdoors can be located for a dipole where the local signal is not too strong (blocked or reduced due to structures), but skip from a given direction is received well.

Another method involves a dipole connected in parallel with the conventional all-channel antenna. The all-channel antenna is aimed for a null (weak point) in local signal, and the dipole adjusted for best signal from the skipper.

Some DXers have had unusually good luck by just connecting a roll of T-line in parallel with the all-channel antenna and "squeezing and unrolling" the line until the weaker signal got stronger. Not scientific, but it has worked!

A DIFFERENT APPROACH: REPOLARIZED ANTENNA

The ability to significantly reduce the ratio of local signal to skip signal seems impossible. Not so, as I'll try to show.

Polarization and Distant Signals-

Conventional U.S. TV and FM receiving antennas are horizontally polarized to receive the horizontal only U.S. TV transmissions and horizontal or vertical FM transmissions. (Vertical FM transmissions are for FM receivers fed by a vertical whip in cars.) This simply means that conventional antennas are mounted horizontally on a mast to receive the horizontally polarized signal.

Knowledgeable DXers know well why the receiving antenna must be capable of receiving at least one of the polarizations of the transmitting antenna. (A circularly polarized antenna, a helix for example, transmits or receives both vertical and horizontal signals.) For the non-technical DXer, the sketches and a simple analogy show the difference between horizontal and vertical polarization. Energy leaving a horizontally only transmitting antenna is concentrated (shaped) as shown. The receiving antenna must be mounted so that it accepts this concentration.

A simple analogy of a hand, coin, and coin slot in a vending machine is also shown. The hand (horizontal transmitting antenna) must feed the coin horizontally (wave in space) into the slot (receiving antenna) to work. If held vertically, the coin cannot fit and it's no sale.

Of course, polarization of a conventional horizontal only receiving antenna can be changed to vertical by rotating it 90°. Depending upon the design, only 5 to 25% of the horizontal signal is captured. A 100 mile distant tropo station with strong signal can, therefore, be reduced to a weak signal by simply remounting (repolarizing) the receiving antenna.

But radio waves reflected from the ionosphere don't behave like the line-of-sight or short distance over the horizon signals. Because of the distances and bending, a skip signal at the receiving antenna may still be horizontally polarized, but odds are that it's partially horizontal, partially vertical, and something in-between! VHF DXers have noted that European TV audio and video (vertically polarized) have been received via F2 as well with horizontal polarized receiving antennas as with vertical antennas.

Polarization shifts because of the ionosphere have been realized for years, but only recently have strong suspicions of UHF wave repolarization been proven over certain terrain. Especially in hilly areas, a well-travelled UHF signal may arrive at the receiving antenna as "repolarized" as an ionospheric signal. Because of the smaller

electrical length and known instability of UHF signals, this phenomenon affects UHF the most, but could -- to some extent -- affect a high band TV signal or even an FM signal. In fact, a DXer aiming for an ultimate UHF set up is really missing the boat if he doesn't arrange a combination vertical and horizontal feed for his parabolic UHF antenna.

So What?--

By now, it should be obvious how a repolarized antenna might -- in theory -- help ID a weak skipper over a stronger local. By remounting a receiving antenna so it is vertically polarized the local signal should weaken greatly since its signal is almost entirely horizontally polarized. But the skipper may weaken only a little, may stay the same, or may even increase over that received with the horizontally polarized antenna. For example, say the local signal strength is 2000 microvolts with a horizontally polarized antenna pointed toward a weak skip station that is supplying 200 microvolts. Nice offset bars, but a poor chance for an ID. By mounting the antenna vertically, maybe the local signal goes to 50 microvolts, but the skipper drops to only 75 or 50 microvolts because much of the skip signal is vertically polarized. The before "local to skipper" signal ratio of 10:1 has been changed to 1:1 or 1:1 $\frac{1}{2}$, and you've got an ID!

Test Results--

This idea was tested during several of last summers many good E'skip openings. (It was the best E'skip season since 1961, which I missed almost entirely because of graduation, marriage, and relocation in Illinois.) While test equipment and procedures were not exactly "Consumer Report" quality, results were conclusive. A 10-element, Finco ch. 2 yagi; Winegard suburban 2-83 log periodic (about \$10 discount); and a \$2 in-line ch. 2-13 antennas were used. A VTVM attached to the AGC line provided relative signal strength indications. Of course, differences in local to skip signal levels were simply visual.

During a weak ch. 2 and 3 opening, the familiar fluttering offset bars indicating WDIQ 2 in Alabama were observed directly through a solid WBBM 2 Chicago signal with my JFD 2-13, 16 element, LPV, 30 feet off the ground. This kept up for 10 minutes, and I decided this was as good a time as any to start the test. A 10-element ch. 2 yagi was "interwoven" along my wife's clothespoles and clothesline. This brought the antenna boom about 5-6 feet off -- and parallel to -- the ground, and the longer elements dug a few holes into the grass. (This, of course, raised heck with the impedance match, but it was so convenient.) With both the now vertically polarized ch. 2 yagi and the all-channel feeders, I switched back and forth and noted amazing results. With the all channel, WBBM was still as strong as ever, with weak offset. With the vertical antenna, aimed at WBBM, a good grade signal was received from WDIQ! WBBM 2 wasn't noted. I quickly connected the Winegard and, by rotating it from horizontal to vertical polarization, could receive WDIQ also, but a little weaker than with the ch. 2 vertical yagi.

In the next few weeks, I noted that this worked to some extent during all openings. However, when skip openings reached the ch. 5 and ch. 6 level, more "repolarization" of the skipper was noted on ch. 2 and 3, and would be expected due to the more active E layer. But in all cases where the skipper was being "challenged" by a stronger local, improvement was noted. (Of course, sometimes skip was so strong it completely covered the local and the technique wasn't needed.) Also noted was that the best skip signal was often received with the "repolarized" antenna positioned somewhere between horizontal and vertical, indicating that a greater portion of the signal was being "repolarized" to that point. Also, a hand-held antenna at the receiver worked OK, but not as good as outside even at ground level. This is natural because of some "repolarization" and reflection of all signals that must pass through the walls of a house to get to an indoor antenna. (DXers with rabbit ears often note that skip from all directions comes in best with rabbit ears in the same position. Apparently, there's one ideal path through a window, door, etc. to the antenna. With antenna outdoors, the chance for reflections is reduced.)

Tests were not made during aurora or meteor skip openings. I imagine that this technique would work quite well on aurora, since signal polarization is really tore up. And signal reduction of locals is really needed in locations like mine where the antenna must be pointed toward the local transmitters to the north for aurora. For meteor skip, however,

where every microvolt of signal is needed, too much reduction of the weak station might prevent an ID.

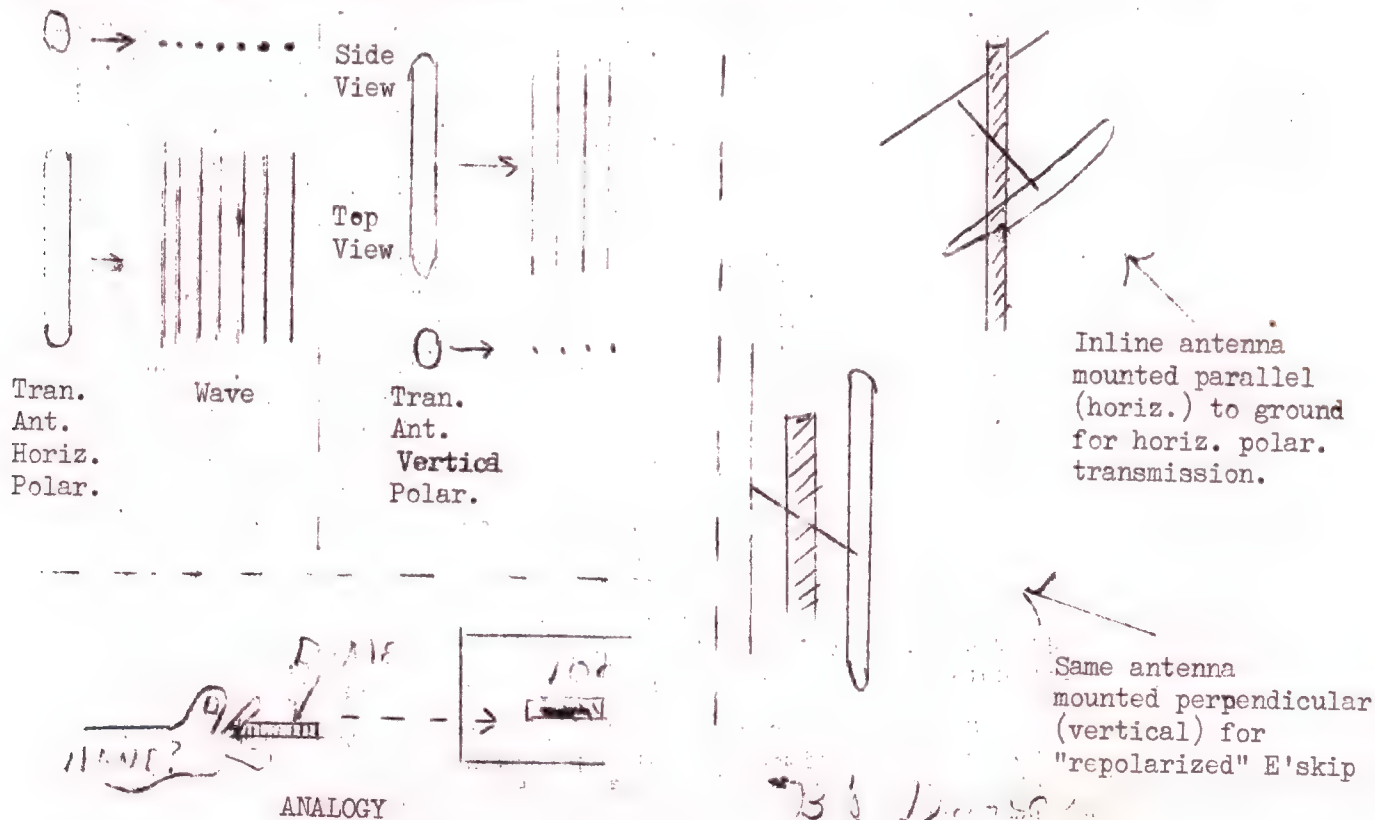
Of course, on FM results will vary since many transmissions now are horizontal and vertical. For tropo, improvement in reception of a weak vertical signal adjacent to a horizontal only local should be great. Or, if a local horizontal only FM station is challenged by an adjacent skipper, results again should be excellent. However, if the local transmits both horizontally and vertically, this technique is no good unless the signal strength of the skipper is great between horizontal and vertical polarization.

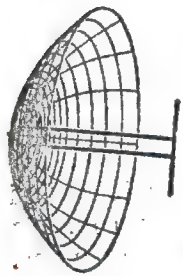
Choosing an Antenna and "Construction"-

Since we're after a reduced local to skipper ratio, you don't need a high gain antenna for exploiting this technique. I used a \$2 in-line the rest of last year and just mounted it on the clothesline facing N, E, S, or W as needed! This spring, I intend to mount the Winegard vertically on a rotor and note effects on VHF & UHF TV and FM. The Winegard's has gain is about 1 to 3 db on 2-6, a loss on FM, and about 2 db on UHF, but that's OK. It proved satisfactory last year for E'skip TV. For TV IXing, I would suggest a simple one-bay conical or in-line (\$2 or 3 each) used in one of these modes: (1) hand-held at set and repositioned for best skip signal, (2) system that allows hand-rotation of direction and "tilting" so that polarization can be adjusted from horizontal to vertical, (3) permanent vertical mounting on a mast outside that could be hand-rotated, or (4) permanent vertical mounting with rotor. These antennas are now not listed in popular electronic catalogs, but can be purchased at discount houses like Olsen Radio or any local TV shop.

Methods for permanent mounting on a mast are self-explanatory and left to the individual. Simple nut/bolt or L-bracket and Upbolt can be used for the light-weight antennas suggested. Of course, a simple cut-to-channel 300 ohm T-line folded dipole with standoffs on a board and mounted vertically will also work OK for one strong local channel. For more than one channel, the cheap antennas suggested will cover the entire band. An inexpensive FM antenna will work OK for FM DXers. Or use a single 2-83 suburban log periodic (\$10 discount price).

Whatever route taken, this method should help most DXers at least a little. Give it a try and let me know of your results.





V.H.F. RADIO

"Devoted to the exciting world of VHF radio from 30 to 54 MHz... and associated items of interest"

By: Bob Cooper, Jr. W5KHT
4007 North Pennsylvania
Oklahoma City, Oklahoma
73112

APRIL 1969

Address Change:

Note please that my stint in the U.S. Virgin Islands is not any more; I am now back in the mainland of the USA. The Oklahoma City address given should take care of reaching me until further notice.

Add To Radio Paging List

Our February column listed the best known data on the 35.22, 35.58, 43.22 and 43.58 MHz radio paging stations.

Our list showed a 35.58 station in Denver, Colorado. The call letters of this station, thanks to Glenn Hauser, are KAA 276. Add same to your list accordingly.

This column is being prepared earlier than normal; if you sent in data on the February published list, and it does not appear here - do not despair. We'll catch it in the next available column!

Choosing a Receiver

We have had a few notes asking us to recommend a receiver to cover the 30-54 MHz range. We hesitate to actually recommend a specific receiver, since we have tried only a few ourselves. But we can cover briefly what is available in this region, what the units cost, and set forth a few things you should be careful of.

The 30-50 MHz range is sort of in-between radio spectrum. From 50 to 54 MHz is the amateur (radio) six meter band.

From 30 MHz down is the so-called shortwave spectrum. In most text books VHF starts at 30 MHz and runs up to 300 MHz; then UHF from 300 up. Many of the same text books describe the 30-50 region as 'essentially local - ground wave - coverage limited to 25 to 50 miles.' (It might be noted that the same texts also say the same thing about the entire low band TV region from channel 2 through 6. Yet as I type this while still on St. Croix in the Virgin Islands I am watching channel 2 from Rio de Janeiro, Brazil - 3180 miles. I've logged the same channel 2 station 5 nights out of 7 for six weeks now for periods of from 30 minutes to three hours. The text books are on occasion not totally accurate!)

DX reception notwithstanding, the FCC decided that the 30-50 MHz range was 'ideal' for local base to mobile communications; and they assigned the entire region to this type of service shortly after WW2. So today you find police departments, the highway patrol, fire departments, oil drillers, tree haulers, and just about every type of two-way radio user operating in this frequency range.

In your own local (ground wave) region, a receiver tuning this range will put you in touch with just about everything going on; from the delivery of Mrs. Smith's diapers to the riot down on the corner. When DX conditions exist, world wide reception is possible and probable.

The '30-50' listening craze caught on several years ago, and now a dozen companies or more produce, import and sell receivers for this range. Before Allied and others offered receivers in this range, you had to settle for either converted 'police' radios, or the extremely expensive shortwave receivers such as the Hammarlund SP-600 which tuned this range 'as well as' the shortwave frequencies below 30 MHz.

Probably 99% - + percent of all units operating in this range use FM, or frequency modulation. The most conspicuous exception to this rule is the Radio Paging stations on 35.22, 35.58, 43.22 and 43.58 MHz. Most of these are still AM transmitters - but even here there are exceptions.

It is possible to tune in AM on an FM receiver, but it is difficult. The better the FM receiver, the more difficult it is. It is easier to tune in on an FM receiver, by tuning slightly off of the station frequency for maximum audio intelligibility (this process is called slope detection).

Because most of the transmitters in this range are FM, it follows that most receivers will also be FM. In fact, if you are going to buy one of the many speciality receivers covering 30-50, you almost have to settle for an 'FM only' model.

The receivers now offered are tube only, tube plus transistor and fully solid state. It seems foolish to buy anything not fully solid state these days; when you have the choice.

The receivers available are available as battery operated only sets; battery and 110 VAC operated, and 110 volt AC only. The battery only sets tend to be the small hand held units, 7-12 transistor jobs. They usually have an 'external antenna' jack, and come with built in antenna. Unfortunately, even the addition of an external antenna will not make this type set perform like a full receiver - these are intended primarily for local reception of 5 to 10 miles. Their primary failing is in selectivity (the ability to tune between or separate strong local stations and find a weak one on a frequency in between), followed by their lack of sensitivity, and finally by their lack of stability.

The battery plus 110 VAC sets can be one of two extremes; the aforementioned battery only set with a simple 110 VAC adapter, or, the super deluxe all solid state receiver that takes advantage of its non-tube design to give you portable battery operated operation.

A good rule of thumb is that if the set has 12 or fewer transistors, it is primarily a portable set with poor selectivity and sensitivity.

Some of the more desirable features to look for are as follows:

(A) Solid state

PLANNING YOUR ULTIMATE TV DXING INSTALLATION

" A FOUR PART SERIES FEATURE DEALING WITH TV DXING TECHNIQUES AND EQUIPMENT TO ASSIST YOU IN PLANNING YOUR OWN EQUIPMENT REQUIREMENTS"

by:

Bob Cooper, Jr. (KV4FU)
P.O. Box 1355
Frederiksted, St. Croix
U.S. Virgin Islands 00840

(Part Three)

Amplifying Equipment

In the last - second - section of this four part series we discussed the use of coaxial cables and noted that one nice thing about coaxial cable loss (from antenna to receiver) is that you can build the signal(s) back up again with a booster or amplifier.

It may surprise some to learn that lowering the signal (due to transmission line loss) from antenna to receiver is not nearly as bad as it sounds - provided you start out with sufficient signal at the antenna (output) terminals.

One of the clever accessories available is the antenna pre-amplifier. Winegard started the craze by supplying an antenna that included an (almost) built-in booster, in 1961. They simply eliminated the short inter-connecting twin lead from antenna output to mast mounted booster input, and called their product an amplified antenna. It caught on. In those days we were still using tubes in boosters and the 6DJ8 was the hottest tube out. (It is still a pretty fair tube.) About the time that transistors got good other manufacturers joined the rush and soon everyone had an amplified antenna. Only, transistor-amplified antennas had problems. The transistor is a curious little device that cannot stand a very high input signal. If an amplified antenna using a transistor amplifier was installed in an area that had a local station or two, the strong local station(s) drove the transis-

tors crazy. They went into oscillation, over-loaded and sometimes gave up the job completely. The early transistor amplifiers were quickly followed by manufacturer instructions that they were to be sold only to people who lived 40 or more miles from the nearest (VHF) television station.

About that time Winegard introduced the Nuvistor amplified antenna, using the 13CW4 Nuvistor. Now a Nuvistor is a cross between a tube and a transistor. It has the solid state (ie. it should last forever) characteristics of the transistor and the you-can't-overload-me abilities of the outdated tube.

Recently, without too much fanfare, new, improved transistor amplified antennas have come on the market. They reportedly will not overload (at least as readily), have good gain and a low noise figure (noise figure determines how far down into the snow the amplifier will work at boosting signals).

OK - so you can get an amplified antenna; an amplified LPV or an amplified all-channel (VHF) yagi antenna. What good are they?

If you have a few local (within 40 miles) signals, count on the amplified antennas to make the local signals even more unbearable for your receiver. Stronger, as it were. Which will only cause your DXing channels, adjacent to the local channels, that much less useful. Unless you resort to trapping out the local signals (see section 1

of this series).

If you are 40 or more miles from the nearest transmitter, the amplified antenna will be about 10 percent more effective overall than the same antenna, not amplified. This makes a 100 mile signal look like a 90 mile signal, or a 200 mile signal like a 180 mile signal. This may seem token improvement - but the 'ten percent improvement figure' is based on some averages, which may or may not fit your installation. They are:

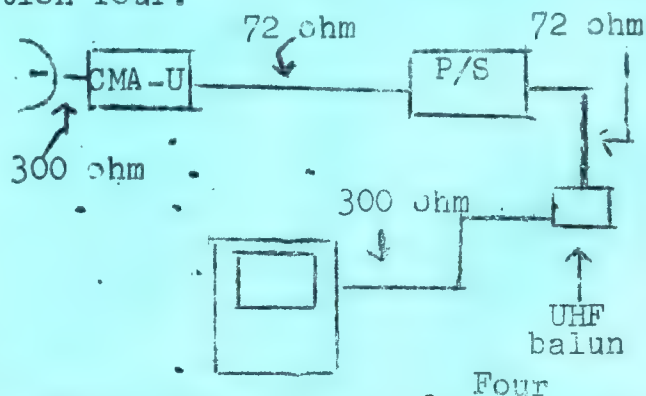
- (1) Assuming that you have a TV set that is in the peak of condition, has a good low-noise tuner and a minimum of three i.f. stages.

The amplified version of the antenna can only increase the voltage that is fed into it. The antenna has to capture the signal first, before the amplifier can amplify it. If you are sort of up-tight on space for a big antenna, you can usually assume that the next to largest model available, with amplifier, will give about the same long range performance as the largest antenna in the line, without the amplifier. Of course the largest antenna and the best antenna-amplifier is the best combination of all, if you live where you can use it.

Summarizing amplified antennas: Useful if used correctly. Not everyone's cup of tea. Good if you are 30-60 miles from local stations (VHF only), best if you are 50 miles or more distant from locals. Not recommended if you are under 30 miles, unless you stick to the Nuvisor models.

All of the forgoing applies to amplified VHF antennas; NOT UHF. Of all of the common amplifying devices known to date (ie. tubes, Nuvisors, transistors), only the transistor holds out much serious hope for UHF. The plain truth is that you

cannot buy a UHF booster, amplifier, or amplified antenna that is worth a darn for DXing purposes. There are UHF amplifiers out, designed for UHF (on channel 1, not converted to VHF) MATV distribution systems. These are useful ONLY when the input signal to the MATV amplifier is high (1,000 microvolts or more) and will NOT amplify a weak signal up out of the snow - with one exception. And here again we turn to a CATV type product. Blonder-Tongue and Jerrold both have CATV type UHF mast mounted pre-amps that do work, and are surprisingly modestly priced. The best of the two is the Blonder-Tongue CMA-U, available in two models; one to cover channels 14 to 50; the second to cover channels 40 to 83. The unit is available for 300 ohm or 72 ohm input (ie. connection between antenna output terminals and amplifier input terminals), and 72 ohm (output), only. The unit mounts up at the antenna, and power is fed to it through 72 ohm coaxial cable from a remote (inside) mounting power supply. The same coaxial cable that carries power up to the amplifier also carries signal down, through the power supply, and to the set. See illustration four.



Note that at the set you go from the output of the power supply (ie. where you get the amplified signal but and into your receiver) at 72 ohms, and that this requires an UHF balun or matching transformer to convert from 72 ohms to the 300 ohm twin lead terminals on the back of the receiver.

The Blonder-Tongue and Jerrold UHF antenna mounted pre-amps have one fault - they are using transistors and transistors overload with strong UHF signals. When this happens you find the picture information from the strong UHF channel(s) super-imposed over (on top of) the weaker picture from all distant stations. This makes the unit useless in strong UHF signal areas. Experience indicates that if you are within 30-40 miles of a 1,000,000 watt UHF station, you had better forget the UHF pre-amp, unless you use the 7 foot parabolic antenna for receiving, and most of your DX comes from directions other than where you point the dish for the local station. (By turning the dish off of the local station, you knock its strength way down. This reduces the amount of signal that hits the UHF pre-amp, to a tolerable level, from the local station(s) and then the pre-amp can do its job un-hampered by the super strong local.)

Better transistors are coming out all of the time. The day will eventually come where a transistor amplifier will show up in the UHF tuner, as an RF amplifier (present UHF tuners have no RF amplifiers - accounting in the main for the poor DX weak signal performance of UHF tuners). When this happens there will be a substantial improvement in UHF DX reception.

Down The Line ...

At the bottom of the transmission line, just ahead of the set, is your last opportunity to amplify the signal(s) before the receiver gets in its licks. But is it worth it - with modern receivers?

In the mid 1950's every fringe viewer had a booster. It was usually mounted on top of the set, and the weak faltering fringe area signals came to the booster, where they got a jolt of gain, before they were fed to the receiver. These were the days when rapid strides were be-

ing made in tube design, and a TV receiver sold 'last' year (with the then latest), RF amplifier tube in the tuner, was often superseded the following year by a better tube. Since you couldn't very easily rip out 'last' year's tube from the tuner and wire in the new one, you bought a booster with the new tube in it, it became the first RF stage in your receiving system.

Today's tube technology has just about come to its end. Most firms now specialize in transistor work and most of the newer tuners will be fully transistorized soon.

The rule of thumb is this. If your receiver was manufactured before 1958-59, an all-channel (VHF) booster for channels 2-13, using a 6DJ8 tube, stands a 50-50 chance of giving you better weak signal reception. The 6DJ8 was the last of the really hot RF amplifier tubes, and everything that has come along since the 6DJ8 is strictly for specialized (non-consumer) applications. Here, unfortunately, the CATV people can't help us since all of their exotic amplifiers are strictly single channel affairs.

What about the new transistor booster-amplifiers - if the transistor is so hot? Unfortunately, almost all (if not ALL) of the transistor units advertised for home use are in truth distribution amplifiers; designed not so much to amplify weak signals well, as to amplify moderate to strong signals well enough to operate 2 to 8 receivers off of a single antenna. It may not make much sense to you, but a distribution amplifier intended for multiple set operation from a single antenna is NOT a good amplifier for a single set, to be used as a booster. If it is, by your own experience, this only proves one thing ... that your TV set was pretty sick to begin with.

There have been a few (darn few) exceptions to this through the years.

ULTIMATE DXING -- continued

The best of the exceptions was the Winegard WBC-4, which was produced with a single 6DJ8 tube in a single stage amplifier. This unit could be hooked up as a single set booster, with fair results, or as a distribution amplifier to run up to four sets.

What manufacturer specifications do you look for, in the fine print, when selecting an amplifier? Amplified antenna combinations (an antenna and an amplifier in one package) is fraught with mis-leading figures. At one time you could count on the manufacturer to give accurate (plus or minus 10 percent) data on the gain of his antenna from channel 2-13. You could also count on the manufacturer to give accurate data on the gain of his outdoor booster (to be mounted at - but not as a part of - the antenna). Then when the manufacturers combined antennas and amplifiers into a single package some bright fellow decided to rate the package as the combined gain of the antenna PLUS the antenna amplifier. A 10 db antenna with a 10 db booster built in, resulted in an amplified antenna with 20 db gain. This may seem legitimate to you but consider this. It is easy to design an antenna amplifier that gives 10, 15 or 20 db of electronic boost. Or you can design it to give tilted gain, such as 10 db on channel 2, 12 db on channel 7 and 15 db on channel 13, if you wish. Or flat gain, of 20 db on 2, 7 and 13.

So what you say? So this? Suppose your antenna is lousy at channel 2. And only fair at channel 13, such as 4 db actual antenna gain at channel 2 and 8 db actual antenna gain at channel 13. You add this antenna to a 20 db flat gain amplifier and then you claim 4 plus 20 or 24 db amplified gain at channel 2 and 8 plus 20 or 28 db amplified gain at channel 13.

Now the competitive antenna has 10 db gain on channel 2, 12 db on

channel 13, to which they add a 12 db (flat gain) amplifier. 10 plus 12 on channel 2 is 22 db gain; 12 plus 12 on channel 13 is 24 db gain.

Now enter the buyer. He sees that antenna 'A' has 24 db amplified gain on 2, 28 db amplified gain on 13. And antenna 'B' has 22 db gain on 2, 24 db on 13.

And the customer buys antenna 'A'. And he is wrong!

Wrong - because the second manufacturer built a better antenna, where it counts, in the antenna itself. Remember - the antenna can only amplify (as an amplified antenna) if it captures the signal first. The antenna part has got to be good - and compromising the gain of the antenna proper in favor of more gain in the amplifier is not the right route to an effective system.

You guard against buying the wrong antenna by carefully checking these points:

- (1) The amplified antenna with the fewest number of electronic amplified stages (ie. the fewer transistors, Nuvistors, etc.) but the same relative system (antenna + amplifier) gain is the better antenna system. The more gain the system truly gets from the antenna, the less it must get from the amplifier, and, the better off you are for DXing. If this were not true, someone would (and they may well yet) come out with a 30 db amplifier tied to a brass ball and claim a 30 db amplified antenna.

In any amplifier, the gain of the amplifier is secondary to the noise figure of the amplifier. The noise figure is sort of a figure of merit and the lower the noise figure, the better the amplifier for weak sig-

nal work. The same thing is true in the RF (amplifier) section of the TV receiver, but this type of information is simply not available from the manufacturers today.

Beware when one amplifier says '30-db gain' and another says '24 db gain' - and they both seem to have the same circuit, or amplifying devices. Dig further - ask to know what the noise figure of the amplifier is. If the amplifier has a noise figure of 4-5 db on low band, and 5-6 db on high band, it is about all that you can expect from a consumer home type product. Some manufacturers may claim noise figures as low as 3 db on low band and 4 db on high band, and if this is the case, check the 'too-good-to-be-true' unit against another similar unit. Chances are that if the circuits are very similar, their noise figures and gain figures will be also.

One more thing to be careful of. One (and perhaps more) of the UHF converter manufacturers states his unit has a 'booster-amplifier' for 'good reception even in weak signal areas'. His intent is to suggest to you that the converter has an RF amplifier stage - ahead of the conversion stage in the converter. This is mis-leading. True, this unit does have an amplifier, but it is an i.f. stage amplifier that comes after the conversion stage, between the converter and the terminals that ties to the TV set input. This doesn't make the converter bad, it only is dis-tasteful for a manufacturer who should know better.

The better grade of UHF converters on the market (most feed the converted UHF signal into your TV set which you tune to channel 5 or 6) are slightly superior to the best built-in UHF tuners found in today's receivers. This is due primarily to the better electrical design of the converter stage, in the converter, over the same stage in the tuner and is not directly attributable to the so called 'booster-amplifier' which

they may include. You can get the best results at UHF with an out-board UHF converter - and if you are serious about UHF you should invest in a unit such as the Blonder Tongue BTX-11A.

Things To Stay Away From

Not recommended for DXing purposes are the following loudly taunted home-use items:

ALL CHANNEL -

- (1) Antennas - when this means 2-83 and FM. Inferior UHF performance, poor FM and not very good VHF TV (you can do better)
- (2) Amplifiers - the UHF portion is so bad that even in moderate signal areas it performs badly, and VHF and FM are compromised to include UHF. Not for DXing.

UHF -

- (1) Boosters or pre-amps unless they are the CATV type
- (2) Amplified antennas - period.
- (3) Coaxial cable unless the runs are short and a CATV amplifier is used at the antenna.

COUPLERS

- (1) To couple two antennas (one VHF, one UHF) together for a single download to the set, and/or to split the output at the set (once coupled at the top, or with an all channel antenna - which is also forbidden) from a single all channel download, for separate tying to the VHF and UHF antenna terminals on the receiver. If you need a coupler, you have the wrong type of installation for DXing - you should have separate antennas and downloads for VHF and UHF.

Installation Tips

(A) Antenna -

- (1) Use separate antenna, V & U
- (2) Run separate downloads for both-
- (A) Use 72 ohm coax for V

(B) Use foam-filled 300 ohm twin lead for U; use coax for U only if you install CATV type pre-amp at antenna.

(C) Coax can be taped to mast or tower leg with no ill results. Any twin lead must be supported with 3-5 inch stand off insulators. Use as few as possible to keep line taut, usually 1 every ten feet, or to support line either side of bend around corner. Make bends in 300 ohm line gradual, no more than 90 degrees in 9 inches of line.

(3) If both antennas are turned by same rotor, mount V antenna on bottom, U on top. Do not attempt to stack a large deep fringe V and 5 or 7 foot U parabolic on same rotor mast. If you use Alliance rotors, always use thrust bearing bracket (Allied Cat. 280, 1969, page 404, bottom right hand corner of page) to take weight off of rotor proper. This is the best \$2.91 insurance policy you can buy!

(B) Amplifiers -

(1) Use an amplified antenna of a design to suit your locale when you are 30 miles or more from nearest VHF station. The Nuvisor model by Winegard is a proven performer (APN-220) but some of newer transistor models also acceptable.

(2) Use a tube type 6DJ8 booster/amplifier at your set only if it is 1958/59 or pre-1958 variety. If you want to amplify, do it at antenna where possible.

(C) Tower - Height

How important is antenna height? Extremely important if you live in built up metropolitan area. Your DXing antenna should be above the majority of everything in your immediate neighborhood, in the following categories:

(A) 10 feet or more above the top-most power/utility lines.

(B) Above the tops of nearby buildings (within 1/2 miles).

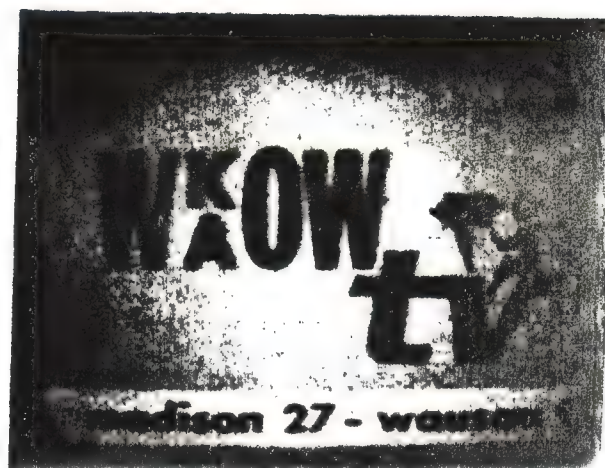
(C) Above the top of nearby trees (1/2 mile), especially at UHF.

A good compromise height is to have your antennas 65-75 feet above ground. A tower is nice but expensive. A fifty foot steel push-up type mast mounted on top of your roof will usually end up with the rotor motor close to 65 feet above ground, which in many areas is adequate.

Practical experience indicates that in metropolitan areas your everyday tropo range (ie. distance you can consistently see ground wave) will be almost twice as great at 65-75 feet as it will be at 30 feet. The exception to this rule is when you live on a hill that is above the area you live in. Manmade buildings, power lines and so on do soak up a great deal of signal, and you have to reach high enough above the built up levels in your area to get into signal layers that have not been contaminated by these objects.

There is no substitute for good height and clearance above surrounding objects, until you break out above these objects, regardless of where you live.

NEXT MONTH - this four part series concludes with a discussion of receivers, and the glossary of eqpt.



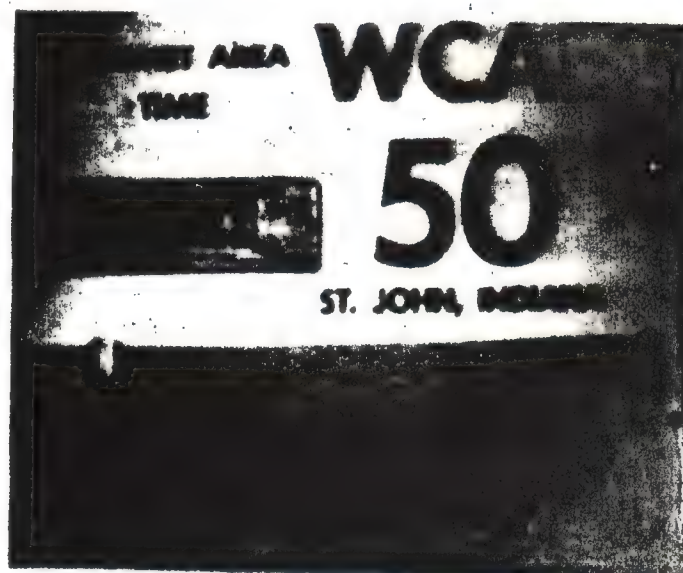
Ned-erland 1 at top left from Henny Denning.

Top Right: WKOW-TV photographed by Bill Heusmann.

Right Center: WBBM-TV Test Pattern shot by Bill Heusmann.

Bottom Left: Toledo's ch. 24 UHF WDHO-TV captured by Bill Heusmann.

Bottom Right: Heusmann's lens catches low power educational station WCAE, ch. 50, St. John, Indiana.



- (B) Tuned RF stage
- (C) Three or more i.f. stages
- (D) Squelch circuit
- (E) Zenar diode regulated power supply
- (F) tuneable model
- (G) 50-70 ohm external antenna jack
- (H) 2 watts or more audio output power
- (I) 2-4 uV (microvolt) sensitivity or better for 20 db of quieting

These are full receivers - hook up an antenna, connect to a power source and you are in business.

There are also available tuneable converters that tune the 30-50 MHz range, and which convert the frequency you are tuned to on the converter to a lower frequency (such as the AM broadcast band table radio) ala the UHF TV converter that converts the UHF TV range to TV channels 5 or 6 on your TV set. Midland manufactures such a unit, others probably do. We have already covered fixed frequency converters such as the units from Sentry Manufacturing Company in a previous column.

The full receiver approach is the most satisfactory way to go if you want the entire 30-50 MHz region. The costs begin around \$80.00 for the receiver alone and work up to nearly \$200.00. The best buy is the least expensive unit that fits the A-I criteria set forth above. The tuneable converter approach is a \$40.00 item, assuming you already have an AM radio to connect it to. The fixed frequency converters from Sentry are cheaper yet - but they cover only a very narrow band of frequencies within the 30-50 MHz region.

The antenna is important too. Perhaps not quite as important as with television (DXing) ... but important. The smallest antenna that will give satisfactory reception is the 1/4th wave ground plane, roof mounted. It is omni (all) directional so you can put it up and receive from all directions. This is a 52 ohm antenna, and you inter-connect it to the receiver with RG-58/U if your run is under 100 feet and RG-8/U if over 100 feet. The 1/4 wave ground plane is about as much antenna as a pair of TV rabbit ears would be - on TV - when mounted outside on the roof. So you can see that it is not a world beater - but it is adequate.

Some of the newer receivers available also cover the so-called high band region of from 130 (or 140) MHz to 174 MHz. This is the frequency region just under TV channel 7. This region has just as many interesting operations as low band, and in some sections of the country all local police, fire, etc. work is done in this region; leaving low band to the highway patrols, sherrif and other non-(local) government agencies. Like TV channel 7, you won't hear skip in this high band region, and with a simple 1/4 wave ground plane antenna, you probably won't get much tropo either. Remember that the ground plane is about as much antenna as a pair of rabbit ears would be on TV.

High band DX is possible - but only with good sized outdoor antennas, such as yagis. If you are interested in this type of DX, drop me a note.

Until next month - 73. Bob Cooper, Jr. W5KHT

EDITORIAL

April, 1969

by
Ferdinand S.
Dombrowski Jr.

(WTFDA exec/publisher)

Some of you may have noticed that some mass-circulation publications and even some DX clubs show favoritism toward some clubs when they plug clubs in their bulletins or magazines. Every club, no matter how or small, appreciates any plug they can get because they can't afford to pay for that publicity. The SW column of the March "Popular Electronics" pointed out that there are new clubs cropping up constantly and they endeavor to get a few words in PE or similar publications to tell the world of their existence. Although the main purpose of a club seeking free publicity is to attract new dues-paying members, these clubs are essential to the growth of the hobby. I don't mean every club is essential, but every prosperous old club was once a new small struggling club trying to make itself known to the world. A few words in a mass-circulation magazine can be of inestimable help in that club's pursuit of solvency and prosperity. Whereas the editors of PE and similar magazines may get bored with these constant requests, I was under the impression that such publications are here to serve the hobby as well as to make a profit for the publisher. Perhaps I am wrong. Very few clubs can afford to pay for advertising with any regularity so we must rely on free publicity obtained from other clubs and magazines.

While free plugs in other club bulletins are important and helpful, the vast majority of DXers we'd like to reach are not in any club and we must resort to large national publications to reach them. In a recent annual for DXers I saw no mention of ANARC or some of its member clubs, but other clubs were mentioned. Why not us? We are not a new struggling club with under a dozen members. We are justly proud of our growth, and have received numerous letters of congratulations on the quality and size of our bulletin. Although we incurred a substantial debt when we began publication, we have long ago payed off that debt. How many clubs can say that, in a little more than a year after its beginning? (Before the first issue was published in Milwaukee we already had a debt to WIRC members which was higher than the value of assets received from the former publisher.) Although

we serve a special interest group and therefore cannot be classed as SWLs for whom the mass-circulation publications print their DX columns, we are nevertheless part of that vast body of DXers for whom a plug in PE, EI, RTVE, Elementary Electronics and Communications Handbook is highly relished. The vast majority of DXers are not in any club now in existence, and our problem is to reach them. Only through these large national magazines can be ever hope to reach the person who has never heard of ANARC or any of its members. Magazines that show favoritism could improve their images tremendously if they would play it fair with all of us. ANARC should get publicity above any of its members because ANARC serves the entire DXing hobby.

I have not intended to single out "Popular Electronics" for derogatory comments. But the recent statements explaining why PE does not plug every johnny-come-lately club are very appropriate in indicating what is probably the unannounced policy of other publications as well. We give Hank Bennett credit for having the nerve to explain his position.

We might also point out that some publications will not even print a DX club's reply in "letters to the editor" to a letter from a reader seeking information about DX clubs. Any publication can at least give this much recognition to a club since it is performing a public service in answering the inquiry of one of its readers.

73, f.s.d.

European Scene

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Africa is not too well covered in regard to reliable lists of TV stations. With the possibility of TE skip with us at the present time, here is a rundown of stations operating in band I. The Canary Islands station was covered in a previous column about Spain so I won't repeat myself. As pointed out then, the station on E3 has a power lobe toward North America so it is a possibility for N.A. DXers as well as Europeans.

Official information from Ghana authorities:

Cape Coast:	E2, 5/1 kw (a/v)	As of 4/67 no test cards were radiated only test patterns; situation may have changed by now however.
Kumasi:	E3, 5/1 kw "	
Accra:	E4, 5/1 kw "	

WRTVH69 lists transmission times:

1755-2250 Mon thru Sat; 1600-2250 Sun. School programs 10-1200 daily.

The UAR (Egypt) has only one station in band I, E3 at Port Said, 10/2 kw. An experienced DXer who returned from Cyprus some months ago reported that this station transmits a T/C from 1345-1400, Mon-Fri. but previous to this a color-bar pattern, usually beginning at 1315, (The T/C is the RTMA type except that the contrast wedges within the circle are all black.) WRTVH lists program times 15-2200; on Fri 09-2200.

Rhodesia has 2 stations in band I: Bulawayo E3, Salisbury E4. Times of transmissions conflict from different sources. Checkerboard T/C.

Zambia has 3 stations on band I: Broken Hill E2, Lusaka E3, and Kitwe E4 (40kw). Program times also conflict from different sources.

Kenya has 2 stations: Kisumu/Timboroa E2, and Nairobi/Hillcrest 4. Programming hours conflict from different sources.

Nigeria has a number of stations but programming may be erratic due to the war. (WRTVH69 does not list Biafran stations which are probably off the air now: Aba E4, and Enugu E2 which has been seen in UK.)

Ibadan E2 and E4; Lagos E3; Jaji E4. Programming times vary since stations are owned by 3 different groups. Test Card C seems to be universal but there is also a known special T/C used by Ibadan 4.

Sierra Leone has one low-power station at Freetown on E2, 400w.

South Africa has no TV and the govt has always managed to bypass the issue for one reason or another, but since America's Apollo 8 moon-orbit I have heard that TV has become a hot issue and plans are now being made to introduce TV. (According to one newspaper report, South Africans were irked because the world watched Apollo 8 on TV --the world except South Africa).

On Mauritius, (Indian Ocean), Forest Side has a 5/lkw stn on E4.

That concludes this quick survey of TV in Africa in band I. Information was obtained from World Radio-TV Handbook, EBU Technical Review, and from contacts in that part of the world. A number of letters from relevant authorities have also been of use. Some powers may be ERP while others may be xtr power; all times are local African time. Last minute editing and updating was done at HQ while the bulk of the text was submitted by Roger Bunney as usual.

Future columns in 1969 will be expanded to cover actual DX reports as received in Europe, similar to the Eastern, Western and FM columns of the regular edition of VHF-UHF Digest from the first issue onwards,

THE EUROPEAN SCENE

EUROPEAN
SCENE

Roger Bunney, Trelawne, Cupernham Lane, Romsey, Hants, SO5 8JH, England.

Review '68

The year 1968 has been a most disappointing one in the British Isles for TV/DX. Many of us had expected a poor E season, due to the increasing sunspot activity, but had hoped for some F2 activity to make up for this. However, sad to relate, neither gave good results. Most Dxers can show a thinner log for the past year, indeed this has been the worst year on record, or at least as long as the established Dxers can remember.

Trop activity was observed at the mid part of January, mainly down into France. At this time, paging station activity was also noted, but few seem able to take advantage of this part of the frequency, so it when virtually unreported. The next few months were quiet, until the 5th. May, when the first E opening of the season gave stations down to Spain and Italy. The next 2 weeks were quiet, but the 19th. May gave Dxers the first big opening of the season, with most areas in via E. This opening lasted until the late afternoon. It reached up to ch. 04. After the first opening of any magnitude, conditions remained fairly good, with openings lasting for many hours, again these did not seem to favour any particular direction but Italy, Spain, and Yugoslavia seemed to predominate in most openings. On 15 June Holland on E4 was received, this for E was very short skip-approx 350 miles. When Spain were seen using a new card, with no ident, a stir was caused with Dxers, but quickly died down, when it was ID as TVE. The 29 and 30th June was easily the best day, with both tropes and E, W. Germany was seen on E4 via trops. By mid July, the 'season' was becoming rather lacking, and Spain, Portugal, Italy, and Yugoslavia now seemed to predominate. August brought the end of any great activity, and the odd burst now only was seen. In mid August and early Sept., tropes appeared for a spell, but it was not until 26 Sept that paging activity first appeared. Considerable activity was noted on 35.22, 35.58, with stations into the Chicago area in here. At the end of Oct, start Nov., Auroral activity brought what seems the first trans Atlantic TV/DX. A Dyer in Ayrshire, Scotland received at 2330 GMT on 30 Nov had a FCC standard signal with a brief glimpse of what appears to be the Bulis Eye t, card. This has so far been unid. parts of a prog. were also seen. Mid Nov. brought tropes into France, nothing startling, similarly the start of Dec. Over the period 12-14th Dec, a good trop opening higher up the UK, brought many UHF stations in from W. Germany, and also SWEDEN, on channels 23, 30, and 48. Some of these distances reach up to 750 miles. This betters the previous UHF Madrid ch. 24 into Cornwall... Mid Dec. again brought paging activity, and suspected Auroral activity on the 30th. ended the year. Incidentally Christmas Day gave a gift to vigilant Dxers, with USSR on ch. 01 with a floater. So ended a poor year. *Good*

~~LATE HQ NEWS~~ Conventions

The new Man of the Year chairman for ANARC will be Glenn Hauser. Send nominations to him at Box C 8638, Lowry AFB, Colorado 80230.

Late word has been received that the 1969 ANARC national convention will definitely be held in Toronto hosted by Wayne Plunkett. Exact dates has not been announced as yet, but will likely be in July-Aug. WTFDA's national convention is further explained in this month's CCI column. Complete information will be presented in the May Digest.

Ralph Irace has officially announced that CDXC is defunct. This is not news to anyone but it is now official.

An auroral opening on March 23-24 produced some good skip for at least a few people. I personally saw a CBC station carrying Ed Sullivan starting at 9PM, CST, on Sunday night. Wayne Plunkett phoned me his mysterious loggings recently: (all times EST): Monday morning the 24th: ch.2 str sign/off @ 0335; ch.2, 5, and 9 aurora CCI at 0510-0530; ch.2 str sign-on at 0526. (HQ theory is that KNXT may have been on yet at 0530 but other Los Angeles stations were not, according to a Feb TV Guide; suggest possibly Hawaii? The 0526 str we feel was a local or fringe str which are hard to distinguish thru auroral QRM.) fsd

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